Form C-104
Rev. 02/2009

VALUE ENGINEERING CHANGE PROPOSAL
MISSOURI DEPARTMENT OF TRANSPORTATION

☐ Conceptual Proposal ☒ Final Proposal Date 3/07/11

Contract ID 101217-503 Job No. J5S2179

County Miller/Camden 242 Original Bid Cost 8,337,512.67

Contractor Bloomsdale Excavating Co., Inc. By Bill Priesmeyer

Designed By _____ Phone 573-364-8149

VECP# 11-31 (to be completed by C.O.) VECP ☒ or PDVECP ☐

1. **Description of existing requirements and proposed change(s). Advantages/Disadvantages**
   A preliminary survey by Bloomsdale shows existing ground elevations average approx. 2.2 ft. higher than shown on MoDot plans. This changes the excavation and fill quantities and increases the ratio of rock to dirt average unit price, resulting in a net cost increase for the Rte. 242 mainline of $ 374,255 and a time increase of 20 work days. Bloomsdale proposes to raise the roadway design profile grade and drainage structure flowlines in order to maintain the approximate original bid quantities, and thereby eliminate increased costs and contract time.

2. **Estimate of reduction in construction costs.** $ 374,255

3. **Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.**
   MoDOT Design: Review and implementation of revised profile and drainage structures.
   Maintenance: None
   Operations: None

4. **Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.**

   3/08/11
   (date)

5. **Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.**

   4/1/11 (date) None (effect)

6. **Dates of any previous or concurrent submission of the same proposal.**

   Conceptual VECP: 1/18/11
   (date and/or dates)

Additional Comments:

**** Portion Below This Line To Be Filled Out by MoDOT ****

Comments:

In an effort to meet the original completion date on this project of 12/31/2011 I recommend approval of this V.E. Conceptual Proposal provided certain conditions are met. No additional time should be granted for this change. An initial change order should be issued with estimated quantities and the following items to be considered: Excavation, Compacting Embankment, adjusted Box Culverts and Roadway Drainage. A final V.E. change order would then be issued near completion of the project based on actual field measured quantities performed by MoDOT. This proposal will provide a way to complete the project on time and near the quantities originally bid.

Joshua O. Kinsch Asst. R.E. — 02/23/2011

Submitted By Resident Engineer — Date

Comments: Agree w/ comments above. Claim that actual groundline is higher than plan has been verified by district via hard shots. A cooperative effort between Bloomsdale & district staff has determined a revised, raised profile which will minimize change to original quantities. The revised profile has been presented to various stakeholders (City of Lake Ozark, property owners, McClure Eng) and they've verbally supported the change. VE savings (50/50) will be based on 5 pt. x-sections taken to determine actual groundline vs. original plan profile and quantities determined as noted above, and then final field measured quantities at completion.

☒ **Approval Recommended** — Eric Schroeter by DL — 2/24/11

☐ **Rejection Recommended**

District Engineer — Date

Comments:

☐ **Approval Recommended**

☐ **Rejection Recommended**

Federal Highway Administration — **Date**

Required for FHWA Full Oversight Projects

Approved as 25% VE. Determined that due to error in plans VE was not eligible for 50/50 split. 25% split will be used in lieu of unit price adjustment due to significant change in the work. Bloomsdale will also be compensated for their design work. The dollar amount reference in the attached letter will be full and final settlement for this issue.

☒ **Approval** — [digital signature]

☐ **Rejection**

State Construction and Materials Engineer — **Date**

Distribution: Resident Engineer, Project Manager, District Construction & Materials Engineer, State Construction & Materials Engineer, FHWA. Value Engineering Administrator—MoDOT, P. O. Box 270, Jefferson City, MO 65102

3/3/2011

MoDOT - RTE. 242 - MILLER/CAMDEN CO.
Mainline VECP Proposal Costs
Bloomsdale Excavating Co., Inc.

A) Original Bid - Total Exc. - Rock to Overburden Ratio:

1) Overburden : 355,743 cy = 48% of total exc.

2) Rock : 392,494 cy = 52% of total exc.

Total Exc. Bid Quan: 748,237 cy ✓

B) Original Bid - Total Exc. - Weighted Unit Price Calculation:

1) Overburden : 355,743 cy @ $1.75/cy = $ 622,550

2) Rock : 392,494 cy @ $4.61/cy = $ 1,809,397

3) Totals: 748,237 cy $ 2,431,947

Weighted Unit Bid Price: $2,431.947 / 748,237 cy = $ 3.25 / cy

C) Mainline VECP Proposal Costs (see following sheet for quantities):

1) Overburden Excavation :	Add	25,272 cy @ $	1.75	/cy	$44,226
2) Rock Excavation :	Add	73,174 cy @ $	4.61	/cy	$337,332
3) Embankment :	Decrease	-48,688 cy @ $	0.15	/cy	-$7,303

Net Increase in Mainline VECP Costs = $374,255

3/3/2011

MoDOT - RTE. 242 - MILLER/CAMDEN CO.
Mainline Quantity Comparison - Profile Grade Changes
Bloomsdale Excavating Co., Inc.

Note: Quantities were calculated using average end areas of mainline sta. and plus sta. as shown on the original plans.

A) Mainline Plan Original Ground and Plan Original Profile Grade Line (PGL):

1) B.E. Overburden =	274,004 cy
2) B.E. Rock =	381,422 cy
3) Total Uncl. Exc. =	655,426 cy
4) Comp. Fill =	345,690 cy

B) 5 Pt. Topo Original Ground and PGL raised 3.5' :

		Diff. From "A" Items
1) B.E. Overburden =	265,619 cy	-8,385 cy
2) B.E. Rock =	383,336 cy	1,914 cy
3) Total Uncl. Exc. =	648,955 cy	-6,471 cy
4) Comp. Fill =	358,190 cy	12,500 cy

C) 5 Pt. Topo Original Ground and Plan Original PGL: (VECP Quantities)

1) B.E. Overburden =	299,276 cy	25,272 cy
2) B.E. Rock =	454,596 cy	73,174 cy
3) Total Uncl. Exc. =	753,872 cy	98,446 cy
4) Comp. Fill =	297,002 cy	-48,688 cy

3/3/2011

MoDOT - RTE. 242 - MILLER/CAMDEN CO.
Earthwork Volume Summary Sheet
Bloomsdale Excavating Co., Inc.

Note: Mainline sta 255+00 to sta. 354+35.03
See page 14 for volume totals.

A) 5 Pt. Topo Original Ground and PGL Raised 3.5 ft.:

1) B.E. Overburden =	265,619	cy
2) B.E. Rock =	383,336	cy
3) Total Uncl. Exc. =	648,955	cy
4) Comp. Fill =	358,190	cy

BLOOMSDALE EXCAVATING
Since 1946

Jan. 18, 2011

Mr. Josh Kincaid, Resident Engineer
Missouri Department of Transportation
Camdenton Project Office
93 Morgan Street
Camdenton, MO 65020

Re: Miller/Camden Co.
Rte. 242
Job No. J5S2179

Dear Mr. Kincaid:

In accordance with the project requirements for Contractor Furnished Surveying and Staking Section 627.2.8.2, Bloomsdale Excavating Company Survey Crews have commenced the process of verifying original ground elevations. The initial surveying results indicate a variance between existing ground elevations and the original ground elevations shown on the plans.

Because of the time factor being so critical for this project, Bloomsdale Excavating Company ran a preliminary topographic survey to determine the extent of the variance. The GPS control point calibration, the station/offset for each original topo point and contractor surveyed topo point, and the "Topo Result" are shown on the attached spreadsheet. The "Topo Result" is the difference between the average elevation of the three contractor surveyed topo points and the average elevation of the three original topo points.

The widths of the affected overburden, rock, and/or fill was determined from the plan x-sections for each station. This width times the elevation difference from the "Topo Result" gives a new affected end area for each station. These end areas are then used to calculate a new quantity of overburden, rock, and fill caused by the original ground variance. Based on these calculations, we have determined that the overburden will increase by 25,640 CY, the rock by 59,685 CY, and the fill will decrease by 41,739 CY. These quantity differences have also increased the rock-to-overburden ratio used to determine our weighted Unclassified Excavation unit bid price. Applying our bid unit prices to the changed quantities would indicate the net project cost will increase by at least $ 313,771. The added excavation quantities would add approximately 17 additional work days to the project completion time. Other items of work such as clearing and grubbing, placing rock fill, haul distances, drainage structure flowlines, utility trenching, etc. are affected as well, although the associated costs and time increases have not been calculated for these additional items in this preliminary report.

Site Development
Heavy Civil
Mining
Environmental

CORPORATE HEADQUARTERS
12211 State Route Y • P.O. Box 55 • Bloomsdale, MO 63627
573.483.2564 o • 800.264.2564 o • 573.483.9474 f • www.bbex.com

Bloomsdale Excavating Co., Inc. proposes a VECP to revise the project design profile grades and have attached a completed Conceptual Proposal VECP form with other supporting data to explain our proposal. The design profile grades would be raised as necessary in order to maintain the original bid quantities and the original rock-to-overburden ratio, thereby eliminating the above anticipated cost and time increases. We recognize the strict time constraints for project completion and clearing restraints due to the "bat-free" restrictions, so any changes to design will have to be completed on an expedited schedule. We are prepared to obtain a MoDOT approved design firm to provide the revised design, if that would speed up the process.

Due to the fact that the NTP has already been given, and that changing of the profile grades will affect several items of work such as, erosion control, clearing and grubbing, excavation, fills, and drainage structures, it is imperative that we receive direction from MODOT by Jan. 25, 2011, in order not to impact the project schedule.

We are available at your earliest convenience to discuss this proposal in more detail.

Sincerely,

Bill Prismoyer P.L.S., P.E.
Business Development Director

Enclosed: Conceptual VECP, Supporting calculations

BLOOMSDALE EXCAVATING

Since 1946

April 12, 2011

Mr. Travis Koestner P.E.
Assistant State Construction And Materials Engineer
Missouri Department of Transportation
Central Office- Construction/Materials
1617 Missouri Blvd
Jefferson City, MO 65102

RE: Miller/Camden Co.
Rte. 242
Project No. J5S2179

Dear Mr. Koestner:

Bloomsdale Excavating Company submits the following response to our meeting with you and Patti Lemongelli on Friday March 11, 2011 regarding the VECP on the Rte. 242 project.

Bloomsdale Excavating Company followed the "Construction Inspection Guidance for Section 104" in strict accordance when preparing its Conceptual VECP submitted on January 18, 2011. Missouri Department of Transportation, District 5, promptly responded verbally by requesting a meeting with Bloomsdale Excavating Company for Friday, January 21, 2011. At this meeting, Roger Schwartz, District Engineer and Patti Lemongelli, District Construction and Materials Engineer, confirmed that the Conceptual VECP was approved "on up the line" and directed us to proceed with implementation. This approval process adhered to the 10-day turnaround as identified in the "Construction Inspection Guidance for Section 104".

Bloomsdale Excavating Company then proceeded to obtain additional field data needed along with the design calculations to implement the approved Conceptual VECP. Bloomsdale's Engineers and MODOT District 5 Design Engineers openly exchanged data in a "partnering spirit", in an effort to expedite the re-design process so as not to delay project construction. Upon completion of obtaining field data, performing all necessary engineering calculations and cost analysis, Bloomsdale Excavating Company prepared the Final VECP as detailed in the "Construction Inspection Guidance for Section 104". The Final VECP was submitted to District 5 Resident Engineer, Josh Kincaid, on March 7, 2011 (again in accordance with the "Construction Inspection Guidance for Section 104").

On March 8, 2011, we received a call from Patti Lemongelli to inform us that the VECP was not approved at the Central Office and she recommended that we meet to discuss further and scheduled a meeting for Friday March 11, 2011 to meet with you, Dave Ahlvers and Patti Lemongelli. As discussed in our meeting of March 11, 2011, Bloomsdale Excavating Company still firmly believes that this is a viable VECP in accordance with the "Construction Inspection Guidance for Section 104". From the time of our initial Conceptual VECP submission and approval, until the time of our March 11, 2011 meeting, there were no deviations that changed the viability of the VECP. If the Conceptual VECP was not viable, why were we informed it was approved and directed to proceed with implementation? If it was not viable, why did MoDOT incorporate the VECP design change into the project, taking advantage of 1) the idea that Bloomsdale Excavating Company developed, 2) the resulting large dollar savings, and 3) reduction in the time of completion of the project?

The VECP adjusted the design profile grades, which resulted in a decrease in the Unclassified Excavation quantities, which resulted in a time and cost savings to the State. The time and cost savings resulting from the profile grade design change is unrelated to and is not predicated on any existing ground contour errors. In our meeting of March 11, 2011, you proposed to reimburse Bloomsdale Excavating Co. for all its cost associated with the development and implementation of this design change. Additionally, you suggested that this proposed design change did not fit the standard VECP criteria, but that it more accurately aligned with a PDVECP. Under a PDVECP the cost savings split would be 25% to the Contractor and 75% to MoDOT, in lieu of the equal cost savings sharing of 50/50% in a VECP.

Although Bloomsdale Excavating does not agree with the reasons given by MoDOT for changing its VECP to a PDVECP, in a spirit of cooperation, and as an offer of settlement only, we will agree to your offer and the amounts as set forth below:

- Bloomsdale Excavating Company's Cost to develop/implement the design change $49,095.00
- 25% savings to the VECP $93,564.00

Total $142,659.00

Sincerely,

William T. Priesmeyer

William T. Priesmeyer P.L.S., P.E.
Business Development Director

BLOOMSDALE EXCAVATING

Since 1946

March 07, 2011

Mr. Josh Kincaid, Resident Engineer
Missouri Department of Transportation
Camdenton Project Office
93 Morgan Street
Camdenton, MO. 65020

Re: Miller/Camden Co.
Rte. 242
Job No. J5S2179

Dear Mr. Kincaid:

In accordance with Section 104.6.2, Bloomsdale Excavating Co., Inc. respectfully submits the following information as a follow-up to the initial information in our Conceptual VECP Proposal submitted on January 18, 2011. Following the approval by the Missouri Department of Transportation of the Conceptual VECP Proposal, it was agreed that at each 100 ft. mainline station, a 5-pt. original ground survey would be taken, and then used to determine quantity changes relating to the VECP. Bloomsdale Excavating Co. performed this survey and the information was sent by e-mail to Missouri Department of Transportation District 5 design personnel in Jefferson City.

Using this new 5-pt. original ground data and computer generated typical sections, Bloomsdale Excavating Co. determined that raising the mainline profile grade 3.5 ft. and using transitions to existing grades at each end would give revised earthwork quantities very close to original bid quantities. MoDOT agreed to the proposed adjustment, the 3.5 ft. profile grade adjustment was made, and revised cross-sections were produced in a timely manner. Drainage structures affected by the PGL change were reviewed and new drawings have been issued to reflect the drainage structure changes.

Using the revised design subgrade elevations from the cross-sections that were raised 3.5 ft., and the 5-pt. original ground survey for each station and plus station shown in the plan cross-sections, Bloomsdale Excavating Co. calculated the new adjusted mainline earthwork quantities. This resulted in the new overburden quantity being less than the original plan quantity by 8,385 cubic yards; the new rock quantity was in excess of the original plan quantity by 1,914 cubic yards; and the new compacted embankment quantity was in excess of the original plan quantity by 12,500 cubic yards. All quantity comparisons are very close and achieved the VECP quantity result that was desired. The profile grade data, the station-by-station end-areas and cross-sections, and the volume calculations are attached to this submittal.

Bloomsdale Excavating Co. then used the original plan design subgrade elevations and the 5-pt. original ground survey for each station and plus station shown in the plan cross-sections in order to more accurately determine the VECP earthwork quantities in lieu of the preliminary quantities from the 3-pt. original ground survey used in the Conceptual VECP submittal. The profile grade data, the station-by-station end-areas and cross-sections, and the volume calculations are attached to this submittal. The result of this more accurate method of calculation is that the over-all cost of the VECP savings increased from $313,771 as estimated in the Conceptual VECP to $374,255 as shown in this final VECP proposal. Approval of this VECP proposal will not require an extension of the project completion time.

If needed, we are available at your convenience to discuss this proposal in more detail.

Sincerely,

Bill Priesmeyer P.L.S., P.E.
Business Development Director

Attachments